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|----------------------------------|-------------|----------------------|---------------------|------------------|
| APPLICATION NO.                  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/588,906                       | 08/09/2006  | Hugo Streekstra      | 4662-263            | 4642             |
| 23117                            | 7590        | 09/16/2009           | EXAMINER            |                  |
| NIXON & VANDERHYE, PC            |             |                      | BADR, HAMID R       |                  |
| 901 NORTH GLEBE ROAD, 11TH FLOOR |             |                      | ART UNIT            | PAPER NUMBER     |
| ARLINGTON, VA 22203              |             |                      | 1794                |                  |
| MAIL DATE                        |             | DELIVERY MODE        |                     |                  |
| 09/16/2009                       |             | PAPER                |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                                      |  |
|------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/588,906 | <b>Applicant(s)</b><br>STREEKSTRA ET AL. |
|                              | <b>Examiner</b><br>HAMID R. BADR     | <b>Art Unit</b><br>1794                  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_\_.  
 2a) This action is FINAL.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-12 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_ is/are allowed.  
 6) Claim(s) 1-12 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 09/2006

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Documents Required***

The certified copy of the foreign application is missing in the submitted documents. A certified copy of foreign application is required.

### ***Use Claims***

1. Claim 11 provides for the use of asparaginase in a process, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 11 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 3 recites the broad recitation 90%, and the claim also recites 50% which is the narrower statement of the range/limitation. This is also due to the recitation of the term "preferably".

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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6. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zyzak et al. (2003, Acrylamide formation mechanism in heated foods; hereinafter R1) in view of JP 80035108 (hereinafter R2).

7. R1 discloses a mechanism for the formation of acrylamide from the reaction of the amino acid asparagine and a carbonyl containing compound at typical cooking temperatures. (Abstract). R1 discloses the formation of acrylamide in a model food system resembling potato chip. (page 4782, col. 2, Model fried potato snack system).

8. R1 discloses that asparagine and glutamine are the only amino acids tested that form acrylamide, and the higher yield of acrylamide from asparagine demonstrates that it is the predominant amino acid responsible for the formation of acrylamide. In addition D-glucose is needed for the efficient formation of acrylamide. (Page 4783, Results and discussion).

9. R1 gives the details of the reactions of asparagine and glucose and concludes that the side chain amide group of asparagine is incorporated into the amide bond of acrylamide. To confirm this mechanism, R1 suggests to use either acid or enzymes to hydrolyze the amide bond in asparagine, and measure the acrylamide in a food. R1 further recommends using asparaginase which catalyzes the hydrolysis of asparagine to aspartic acid and ammonia. R1 further reports a 99% reduction of acrylamide in the foods which were treated with asparaginase enzyme compared to foods prepared without the enzyme. (page 4787, col. 1, Verification of asparagine as the source of acrylamide in a food).

10. R1 is silent regarding the source of asparaginase used.

11. R2 discloses a process for the production of asparaginase using *Aspergillus* species. (Abstract).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use asparagines to reduce the formation of acrylamide, as taught by R1, and employ a fungal source of the enzyme as disclosed by R2. One would do so to reduce the toxicological effects of acrylamide in foods in which the reaction of asparagine and a reducing sugar is inevitable due to high temperatures of cooking. Absent any evidence to contrary and based on the combined teachings of the cited references, there would be a reasonable expectation of success in applying asparaginase to reduce the formation of acrylamide in heated foods.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hamid R Badr  
Examiner  
Art Unit 1794

/KEITH D. HENDRICKS/  
Supervisory Patent Examiner, Art Unit 1794